UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,273	10/27/2003	Rajiv R. Singh	H0003965-4510	2796

128 7590 11/06/2007

HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER	
KHAN, AMINA S	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
11/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/694,273	SINGH ET AL.	
	Examiner	Art Unit	
	Amina Khan	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *54,55,60-65,69,76,77,79,81,82,85,86 and 91-129* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *54,55,60-65,69,76,77,79,81,82,85,86 and 91-129* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to applicant's amendments filed on September 24, 2007.

2. Claims 54,55,60-65,69,76,77,79,81,82,85,86 and 91-129 are pending. Claims 1-53,56-59,66-68,70-75,80,83,84 and 87-90 are cancelled. Claims 100-129 are new. Claims 54,62-64,81,82,85,86,91 and 92 are amended.

3. All prior rejections are withdrawn.

Claim Objections

4. Claims 63 and 105 are objected to because of the following informalities: polyol is misspelled "plyol". Appropriate correction is required.

5. Claims 122-124 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 54,55,60-64,69,76,77,79,81,82,85,91-93,95,97-107,109-115,117-119,121 and 123-129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smits et al. (US 4,945,119) in view of Aoyama et al. (US 5,679,875).

Smits et al. teach blowing agents comprising alkanes (column 4, lines 60-65) and about 5 to about 60% (column 4, lines 3-6) pentafluoropropylene or tetrafluoropropylene (column 5, lines 55-65) and up to 30 percent (column 6, lines 65-68) polyester polyols (column 7, lines 25-30), flame retardants, stabilizers (column 9, lines 1-5) and surfactants (column 8, lines 10-20).

Smits et al. is silent as to the global warming potentials, acute toxicity, flammability, ozone depletion potentials, liquid phase temperatures and stability properties of the compositions. Smits further is silent as to all the isomers of the propylenes and the specific alkanes propane, butane and pentane.

Aoyama et al. teach the utility of 1,1,1,2,3-petafluoropropane as a useful refrigerant, blowing agent, and cleaning agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compositions of Smits et al. by incorporating the 1,,1,1,2,3-pentafluoropropene as taught by Aoyama et al. because Aoyama et al. teach

the utility of this fluorinated propene as a component of effective refrigeration, blowing and cleaning agents.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the compositions of Smits et al. and Aoyama et al. would encompass the instantly claimed properties because Smits et al. and Aoyama et al. teach similar compositions prepared from similar compound in similar percentages. One of ordinary skill in the art would expect similar compositions to possess similar properties.

Regarding the limitation of 1,1,1,2 tetrafluoropropene, a compound which differs as a homolog, the claimed invention would have been obvious to the skilled artisan because close structural similarity of the reference compound suggests the claimed compound. One skilled in the art would expect the two compounds to have similar properties.

Regarding the cis and trans isomers of the 1,1,1,2,3-petafluoropropane instantly claimed, Aoyama teaches the use of all 1,1,1,2,3-petafluoropropane compounds. Nothing unobvious is seen in substituting the known claimed isomer for the structurally similar isomers taught by Aoyama since structurally related compounds suggest one another and would be expected to share common properties absent a showing of unexpected results.

Regarding the generic teaching of alkanes in Smits et al., it would be obvious that the teaching incorporates the pentanes, butanes and propanes instantly claimed since they are common components in blowing agents.

Regarding the claimed percentage of "about 70%" for the compounds of formula (II), as the word "about" permits some tolerance, see *In re Ayers,* 69 USPQ 109, and *In re Erickson,* 145 USPQ 207), the "about 70%" of the instant claims is considered to read on "about 60%" of the prior art.

8. Claims 55,60-62,65,69,76,77,79,82,85,86,93-99,101,108-112,114,116,120 and 122 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smits et al. (US 4,945,119) in view of Aoyama et al. (US 5,679,875), as applied to the claims above, and further in view of Nimitz et al. (US 5,674,451).

Smits et al. and Aoyama et al. are relied upon as set forth above.

Smits et al. and Aoyama et al. are silent as to the global warming potentials, acute toxicity, flammability, ozone depletion potentials, liquid phase temperatures and stability properties of the compositions. Smits and Aoyama et al. are further silent as to the specific alkanes propane, butane and pentane.

Nimitz et al. teach refrigeration and blowing agents comprising hydrofluorocarbons, butanes and pentanes (table 4, hydrocarbons), ethylene oxide sterilants (abstract) and lubricants such as polyol esters and polyalkylene glycols (column 13, lines 35-55). Nimitz teaches these compositions have zero ODP, low GWP and toxicity (column 6, lines 60-62) and are nonflammable (column 7, lines 1-10; column 6, lines 65-67).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compositions of Smits and Aoyama by incorporating

the polyalkylene glycols and butanes and pentanes as taught by Nimitz because Nimitz teaches the importance of these components in providing nonflammable compositions with zero ODP, low GWP and toxicity. It is prima facie obvious to combine the two references, each taught for the same purpose, to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423 when ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results. A person of ordinary skill in the blowing agent art would expect combinations of these materials to behave in the same fashion as the individual materials, absent unexpected results.

Regarding the teaching of propane, the close structural similarity of butane and pentane suggests the claimed propane and nothing unobvious is seen in substituting butane and pentane for propane.

9. Claims 54,55,60,69,99-102,109-112 and 125-129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daiken et al. (JP 04110388).

Diaken et al. teach refrigerants and heat transfer fluids comprising 1,1,1,2 tetrafluoropropene, a lubricant oil and other heat transfer components (see abstract and example 12 page 762).

Diaken et al. is silent as to the global warming potentials, acute toxicity, flammability, ozone depletion potentials, liquid phase temperatures and stability properties of the compositions. Smits further is silent to 1,1,1,2,3-petafluoropropane.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the compositions of Diaken et al. would encompass the instantly claimed properties because Diaken et al. teach similar compositions prepared from similar compounds which do not damage the ozone layer. One of ordinary skill in the art would expect similar compositions to possess similar properties.

Regarding the limitation of 1,1,1,2,3-petafluoropropane, a compound which differs as a homolog, the claimed invention would have been obvious to the skilled artisan because close structural similarity of the reference compound suggests the claimed compound. One skilled in the art would expect the two compounds to have similar properties.

Regarding the cis and trans isomers of the 1,1,1,2,3-petafluoropropane instantly claimed, nothing unobvious is seen in substituting the known claimed isomer for the structurally similar isomers taught by Aoyama since structurally related compounds suggest one another and would be expected to share common properties absent a showing of unexpected results.

Double Patenting

10. Claims 54,55,64,76 and are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 7,279,451 in view of Smits et al. (US 4,945,119). The claims do not recite the instant additives of claim 54 however these additives are conventional in blowing agents as disclosed by

Smits et al. (US 4,945,119). One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AK
November 1, 2007

LORNA M. DOUYON
PRIMARY EXAMINER